

Preservice Teacher Curricula Should Include Research on Non-Cognitive Characteristics

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Abstract: Institutions of higher education need to provide curricula for preservice teachers on the importance of non-cognitive characteristics related to success to best prepare and maintain new teachers in K-12 schools throughout the country. Many educators of preservice teachers experienced the importance of curricula that psychologically and emotionally prepares future educators for crippling events, before, during, and after the onset of the coronavirus pandemic. Crises of all types are inevitable within society and schools, and how they are handled by educators will vary based upon educators' non-cognitive characteristics. While societal upheaval can negatively impact schools, faculty, and students by adding stress and uncertainty to the day-to-day work of educators, coping mechanisms such as resilience, grit and self-efficacy can prevent consequences such as teacher burnout and attrition. Consequently, preservice teachers will benefit by accumulating knowledge about the power and importance of these types of non-cognitive characteristics before they enter the field.

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As an educator of preservice teachers at a private university in Pennsylvania it became apparent to me during the 2020-2021 school year how important it is for institutions of higher education to psychologically and emotionally prepare future educators for potentially devastating events, such as the coronavirus pandemic. Crises of all types are inevitable but how they are handled by educators will vary based upon educators' non-cognitive characteristics. While crises can negatively impact schools, faculty and students by adding stress and uncertainty to the day to day work of educators, coping mechanisms such as resilience, grit and self-efficacy can prevent consequences such as teacher burnout and attrition. Consequently, preservice teachers will benefit by accumulating knowledge about the power and importance of these characteristics before they enter the field.

At the time of this paper (summer 2021), teachers and administrators across the globe are developing plans to address the repercussions of the coronavirus pandemic on schools and students. Unfortunately, a significant number of teachers are also considering early retirement or new careers outside of education (Hess, 2020). As reported by Lavery (2020) researchers from Brown University analyzed data from fall 2019 to spring 2020 to gauge teachers' reactions to the pandemic and its repercussions. Teachers from nine states expressed a "damaged sense of self-efficacy," (Lavery, 2020), and an "*Education Week* survey in August noted declines in teacher morale and an increased likelihood of teacher resignation" (Lavery, 2020). For the aforementioned reasons, competent, confident, and motivated new educators are essential for addressing gaps in student learning. Infusing preservice

teacher curricula with information regarding non-cognitive characteristics has the potential to better prepare preservice teachers for twenty-first century classrooms.

Effective Teachers

Research shows that effective teachers have a significant impact on student academic achievement (Sautelle, et al., 2015; Schumacher, et al., 2015). Academic achievement can be measured in a variety of ways including national academic assessments such as the National Assessment of Educational Progress (NAEP), high school graduation rates, narrowing of documented achievement gaps, high stakes state assessment data, and student academic growth data (Deming & Figlio, 2016). Hiring newly graduated educators who are aware of their own and consequently their students' academic and social and emotional needs could enhance student achievement (Sautelle, et al., 2015; Schumacher, et al., 2015) and eliminate documented repercussions of teachers leaving their careers earlier than expected such as organizational disruption (Zhang & Zeller, 2016) and detrimental expenses (Carver-Thomas & Darling-Hammond, 2017).

Challenges faced by teachers pre-coronavirus pandemic included: feelings of isolation (Moore, et al., 2016), increasing numbers of students with diverse and complex needs (Ingersoll, et al., 2016), minimal teacher support systems (Silva, et al., 2014), lack of teacher autonomy (Ingersoll et al., 2016), resource shortages (Sutcher, et al., 2016), pressure related to high stakes testing (Danielson, 2016; Theirs, 2016), and difficult teaching assignments (Ronfeldt et al., 2013). The pandemic has added additional stress to the daily lives of both in-service and preservice educators (Lavery, 2020) making coping mechanisms valuable

personal assets (Centers for Disease Control and Prevention, 2021).

Non-Cognitive Characteristics

Non-cognitive characteristics are often defined in the current literature as competencies (Stecher & Hamilton, 2014), qualities (Hoerr, 2017), factors (Ghasemi, 2017), psychological constructs (Sautelle et al., 2015), traits (Perkins-Gough, 2013), and attributes (Eng, 2015; Petway, et al., 2016) that can potentially lead to positive outcomes. For the purposes of this research, non-cognitive characteristics will refer to personal resources, such as resilience, grit, and self-efficacy that are linked to performance (Credé et al., 2017; Khine & Areepattamannil, 2016).

Research exists regarding the importance of non-cognitive characteristics related to twenty-first century career success (Arnup & Bowles, 2016; Duckworth & Gross, 2014; Gray & Manahan, 2017; Richards et al., 2016; Robertson-Kraft & Duckworth, 2014; Perkins-Gough, 2013; Schwarzer & Hallum, 2008; Stecher & Hamilton, 2014; Stephanou et al., 2013). Previous quantitative research indicates that non-cognitive characteristics can play a role on teacher's longevity and effectiveness (Arnup & Bowles, 2016; Duckworth & Gross, 2014; Gray & Manahan, 2017; Richards et al., 2016; Robertson-Kraft & Duckworth, 2014; Schwarzer & Hallum, 2008; Stecher & Hamilton, 2014; Stephanou et al., 2013; Perkins-Gough, 2013). Taylor (2013), Durham Barnes (2011), Milner (2002), and Milner & Hoy (2003) have also conducted qualitative research regarding the benefits of teachers' non-cognitive characteristics related to longevity and effectiveness.

Eng (2015) called for 21st century schools to approach reform efforts that align with twenty-first century themes associated with success, including non-cognitive

characteristics. Eng (2015) further explained that traditional measures of success are inadequate for the 21st century because they neglect real world skills and are counterproductive for innovation and entrepreneurialism. School reform efforts, including highly qualified teachers for all students, are unlikely without attention to non-cognitive characteristics that enable school policies to align with institutional innovation (Eng, 2015).

Recently, educational researchers have responded to such research by studying non-cognitive characteristics that may be related to teacher retention and effectiveness (Duckworth, 2016; Goertzen & Whitaker, 2015; Hoerr, 2017; Khine & Areepattamannil, 2016; Stecher & Hamilton, 2014). In their study of non-cognitive characteristics linked to success, Goertzen and Whitaker (2015) explain that, due to constant change in the current workforce, it is time for employees to focus less on what one knows and more on who one is and who one is becoming. In education systems, problems have the potential to be solved with a shift of focus from what we know to who we are (Hoerr, 2017), and this is something preservice educators will benefit from exploring alongside thoughtful and informed professors. Institutions of higher education will most effectively prepare pre-service teachers if they ensure that curriculum includes information about the importance of non-cognitive characteristics while still addressing research-based content and pedagogy. This type of multi-faceted curriculum has the potential to guide future practitioners and their students towards fulfilling their own academic, social, and emotional potentials.

Preparing Tomorrow's Teachers

Before the coronavirus pandemic, teachers reported leaving the profession due to limited teacher autonomy; daily struggles

including: difficult students, limited resources, non-existent support systems, lack of planning time and even fears of violence (Rutkowski & Engel, 2013). “But regardless of the reason, none of these departures are cost free” (Ingersoll, et al., 2016, p. 45) to the school systems or individuals. To make sure that every classroom is equipped with quality educators, school districts need to hire new teachers who are most likely to grow and adapt over time as they gain experiences that equip them for successfully moving individual students, groups of students, and organizations forward.

Ronfeldt et al. (2013) found that even when teachers are replaced with others who are identified as equally qualified, the impact on the school or organization as a whole is disrupted and student achievement is still negatively impacted. The coronavirus pandemic illustrated to school stakeholders how important it is that new teachers are prepared to stay at schools for extended time frames to eliminate learning gaps for all students negatively impacted by the pandemic or other societal concerns. New teachers who are aware of non-cognitive characteristics, such as resiliency, grit, and self-efficacy will be better able to cope with challenges and consequently more prepared to meet the needs of diverse student bodies.

Consideration of Past, Present and Future Means to Teacher Certification

Since the 1800s, teachers have faced prerequisites for entry into the profession. “In 1834, Pennsylvania became the first state to require prospective teachers to pass an exam focusing on reading, writing, and math” (Allen & Kelly, 2015). Today, the most widely used exam for teacher certification is the Praxis exam. Forty-six states currently require one or more forms of the exam for certification, and the remaining states have alternative assessments or

measures (Educational Testing Services, n.d.). States have different cut scores and requirements for various certifications, but these assessments only measure content knowledge and pedagogy. Current research discusses reasons why new certification considerations are needed:

The call for measures of interpersonal and intrapersonal competencies is motivated by two recent developments. First, states nationwide are currently implementing systemic reform of their academic standards, with the intention of raising the overall economic and civic capacity of the next generation of U.S. students. Second, new research documents the relationships between academic performance, subsequent career success, and civic engagement on the one hand, and interpersonal and intrapersonal competencies on the other. (Stecher & Hamilton, 2014, p. 5)

The diversity of 21st century learning environments may be the catalyst that demands new ideas on what makes an effective teacher. Research indicates that personal characteristics of educators correlate with teacher effectiveness (Arnup & Bowles, 2016; Duckworth & Gross, 2014; Gray & Manahan, 2017; Richards et al., 2016; Robertson-Kraft & Duckworth, 2014; Schwarzer & Hallum, 2008; Stecher & Hamilton, 2014; Stephanou et al., 2013; Perkins-Gough, 2013), but identifying personal resources using standardized assessments is challenging. When commenting on the newest certification tests for educators, Delpit, a professor of education at Southern University in Louisiana, explains that examining teacher characteristics is another option for ascertaining whether or not preservice teachers are ready to enter the field (Delpit, 2006).

Delpit (2006) believes that instead of adding another test, the profession should reconsider its metrics. To prepare teachers to be successful in schools with a wide variety

of students it would benefit the profession to look at characteristics of teachers who excel at what they do and find ways to instill those qualities in incoming teachers (Barmore, 2016). Additional, qualitative research focused on effective educators could provide additional information.

In an effort to inform and improve the selection of candidates for teacher preparation programs in Australia, Sautelle et al., (2015) studied the value teachers and non-teachers put on six constructs identified in past research as indicators of teacher effectiveness. The constructs included extraversion, agreeableness, conscientiousness, resilience, self-regulation, and cognitive ability. The authors concluded that participants valued cognitive ability as the greatest indicator of teacher effectiveness, but that the other five attributes are also perceived as necessary for teachers entering preparatory programs.

Resilience, Grit and Teacher Efficacy

Resilience, a process where individuals faced with adverse and/or challenging situations utilize personal resources to positively adapt (Graber, et al., 2015); grit, a “perseverance and passion for long-term goals” (Duckworth et al., 2007, p. 1087); and teacher efficacy, a teacher’s beliefs in his or her “capacity to organize and execute the courses of action required to produce given attainments” (Bandura, 1997, p. 3) are three personal resources that will be discussed as important concepts for preservice teacher curricula.

Resilience

Goertzen and Whitaker (2015) credit resiliency as a malleable capacity essential for success in the 21st century workplace. The authors explain that today’s work environments are constantly changing, and

change has the potential to cause anxiety for today’s employees (Goertzen & Whitaker, 2015). Anxiety can cause a negative chain reaction and impede enjoyment, and consequently progress (Richards et al., 2016). Enhancing the resilience of current and future workforces has the potential to enhance employee and organizational outcomes (Goertzen & Whitaker, 2015).

Researchers of psychiatry, psychology, human development, medicine, epidemiology, and social sciences have examined resilience and its impact on individuals and groups for decades (Ledesma, 2014). Definitions of resilience in the literature are not consistent. In a study focused on promoting resilience, Meredith et al., (2011) found over 100 definitions of the term. Britt et al., (2016) synthesized the findings of Meredith et al., (2011) into 10 representative definitions that include an individual’s internal capacity or ability to adapt or to exhibit growth in the face of adversity. Graber et al. (2015) explain, “a broad resilience framework focuses upon identification and promotion of strengths, social connections and capacities to enrich the story of human functioning across a wide range of fields” (p. 21).

Multiple factors, including individual, relationship, community, cultural, and environmental, contribute to a person’s resilience (Mohanty, 2016). To succeed and thrive at work is dependent upon an individual’s ability to utilize characteristics that lead to resilient actions within their environments (Kuntz, et al., 2017).

The fact that resilience is not a fixed characteristic and factors, such as support networks, can and do enhance resiliency (Arnup & Bowles, 2016; Ijadi-Maghsoodi et al., 2017; Ledesma, 2014), make the topic one of importance for educational leaders who are continuously looking for tools to enhance teacher retention and effectiveness. Several researchers have found that an individual’s resilience can have a positive effect

on their career success and the success of the organization where they are employed (Ledesma, 2014; Ronfeldt et al., 2013; Sautelle et al., 2015; Taylor, 2013). The value of resiliency and related non-cognitive characteristics may be of significance if new teachers are to be effective and long lasting in today's schools.

Grit and Today's Schools

Although critics continue to question grit as a valid construct, districts and schools across the nation are paying attention to the idea of grit and the existence of other non-cognitive variables. The Roxbury Preparatory Charter School in Boston, Massachusetts is constantly seeking out new ways to help students persist during challenges (Seider, 2013).

Roxbury Prep faculty members want students to take on the mindset that 'effort determines success.' By explicitly framing everything from nightly homework assignments to the Pi Recitation Contest through this lens, Roxbury Prep faculty seek to strengthen students' motivation and ability to do the hard work necessary to accomplish their goals (Seider, 2013, p. 29).

Another school, KIPP Delta, located in the second poorest county in the second poorest state, Arkansas, has produced impressive results on state assessments and students' growth data. KIPP Delta is part of a national chain of charter schools praised by educational reformers like Bill Gates. The school focuses on getting students into college, and continuously emphasizing the motto "work hard; be nice" (Seider, 2013, p. 56) to accomplish their mission. On their website, KIPP credits Duckworth as a contributor to their character curriculum (para. 2). Other schools are following KIPP's lead. Lyon (2014) conducted research with fifth grade students who were pre and post tested

with Duckworth's grit survey. Lyon (2014) found that after one year of interventions designed to instill grit in students, the students did score higher on the post-grit assessment. Duckworth's research indicates that grit can and has been part of successful instructional intervention experiments that "target growth mindset—and that teach about the importance of certain study techniques, like deliberate practice" (Kamenetz, 2016, para. 30).

As school districts across the country begin to infuse the teaching of non-cognitive characteristics into curricula, it makes sense that hiring authorities consider teacher candidates who embody similar non-cognitive characteristics and institutions of higher education prepare student teachers appropriately.

Teacher Efficacy

Bandura explained efficacy as "beliefs in one's capacity to organize and execute the course of action required to produce given attainments" (1997, p. 3)

Tschannen-Moran et al. (1998) clarified the idea by defining teacher efficacy as a "teacher's belief in his or her capability to organize and execute the courses of action required to successfully accomplish a specific teaching task in a particular context" (p. 224). Since Bandura's work, multiple researchers have found perceived efficacy to be a characteristic that enhances instructor effectiveness (Guskey & Passaro, 1994; Perkins-Gough, 2013; Schwarzer & Hallum, 2008; Tschannen-Moran et al., 1998).

The original concept of efficacy began with Rotter and his social learning theory on locus of control (Hodgkinson 1992; Tschannen-Moran & Woolfolk Hoy, 2001). Locus of control can be defined as a "belief individuals have about who controls the key events in their lives, themselves or various external factors such as other people, chance events, or the Government" (Hodgkinson,

1992, p. 311). In 1976, The Rand Corporation, motivated by Rotter's work, developed two questions to measure efficacy. The questions were created to discover beliefs about whether control over student motivation and performance lay within themselves or within the environment (Tschannen-Moran & Woolfolk-Hoy, 2001).

- "When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment" and
- "If I try really hard, I can get through to even the most difficult or unmotivated students" (Tschannen-Moren et al., 1998)

Results indicate that teachers with a strong sense of efficacy exhibit more gains in student achievement and job satisfaction (Gurskey & Passaro, 1994; Schwarzer & Hallum, 2008; Stephanou, et al., 2013). Schwarzer & Hallum (2008) found that teacher efficacy is "a personal resource factor that may protect from the experience of job strain and, thus, make the escalation of burnout less likely" (p. 1). According to Schwarzer & Hallum (2008), self-efficacy influences motivation (p. 2). Because of this, people with high levels of self-efficacy are motivated to persist in more challenging tasks (Bandura, 1977; Schwarzer & Hallum, 2008).

In 2003, Milner and Hoy completed a case study of an experienced African American teacher with self-efficacy and persistence in a crisis or challenging situation. The authors found that Bandura's 1997 sources of efficacy: mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states were evident in their main participant in the fact that she felt "physiological and emotional arousal that could have affected her self-efficacy and persistence" (p. 13). The main participant was the only African American

teacher on a staff of 126 full-time educators. At the time, Milner (2002) called for more qualitative research to discover reasons why some teachers stay in the field and others leave. "...this study is important as we think about the retention of teachers across the country" (p. 34). More recently, Stephanou et al., (2013) utilized quantitative methods to study how teachers' individual and collective efficacy beliefs affected their job satisfaction. The authors used a sample group of 268 elementary teachers who completed self-efficacy scales. The results indicated that teachers' self-efficacy directly impacted collective efficacy, which in turn influenced job satisfaction.

Effective new teachers are critical if achievement gaps are to be eliminated and all students are going to be prepared for 21st century citizenship (Eng, 2015). Whether or not federal and state legislature over the past 50 years has positively impacted teachers and educational systems as a whole is a controversial and much debated topic (Danielson, 2016; Theirs, 2016; Ingersoll, et al., 2016). Certainly the Elementary and Secondary Education Act (ESEA), No Child Left Behind (NCLB) and the Every Student Succeeds Act (ESSA) all aimed to meet the needs of the nation's diverse student population by allotting provisions, including their definition of qualified teachers, that will equip all students with the resources necessary for higher education and/or career success. Unfortunately, the goal of an effective teacher, capable of adapting over time with an everchanging educational system and society, has not been fully realized and teacher shortages and attrition remain a concern for many schools (Birman et al., 2009).

Non-cognitive characteristics have been linked to career success (Arnup & Bowles, 2016; Duckworth & Gross, 2014; Gray & Manahan, 2017; Perkins-Gough, 2013; Richards et al., 2016; Robertson-Kraft & Duckworth, 2014; Stecher & Hamilton,

2014; Stephanou et al., 2013) but are challenging to measure with traditional assessments. Nonetheless, much attention has been given to non-cognitive characteristics as predictors of success in areas such as education, business, military, medicine, and psychology (Duckworth, 2016; Eng, 2015; Hoerr, 2017; Stecher & Hamilton, 2014). Non-cognitive characteristics or personal resources linked with performance (Credé et al., 2017; Khine & Areepattamanil, 2016) may be part of the reason some educators continue in their field while others leave earlier than expected to pursue alternate paths. Preservice teachers need to be aware of these resources to gain and give as much as possible within today's schools over extended periods of time.

Recommendations for Institutions of Higher Education

1. Preservice teacher coursework should provide students curricula regarding non-cognitive characteristics as tools for coping with challenging situations. This content can be imbedded into units of study where preservice teachers are discussing the importance of students having access to learning that addresses their own social and emotional well-being.
2. Preservice teacher coursework should provide students curricula regarding the power of positive relationships. This action could enhance relationships between colleagues and between teachers and students which could potentially lead to teacher longevity and effectiveness. This content can also be imbedded into units of study where preservice teachers are discussing the importance of students having access to learning that addresses their own social and emotional well-being.
3. Professors of preservice educators should collaborate with K-12 school administration to prepare new teachers by providing continuous information regarding non-cognitive characteristics related to successful and long-lasting teaching careers.

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